

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

This chapter presents the existing transportation, physical, biological and social environment within, and in the vicinity of the Study Area. The natural resources, prime and unique farmland, community facilities, property and utilities, historic and archaeological sites, and hazardous waste components of this EA are described within the Study Area. The area studied for land use, socioeconomic environment, community services, traffic, air quality and noise components is the Study Area and surrounding areas, as appropriate.

3.2 Transportation Environment

This section will describe the existing and future transportation environment in the Study Area. Information on the existing highway network and other modes, traffic volumes, levels of service, and crash history is provided, along with future traffic volumes and levels of service that are predicted to occur assuming normal traffic growth and no changes to the highway system. The Study Area is located in the center of the Town of Gray, and encompasses approximately 7.8 square kilometers (3 square miles) (Figure 1-2, page 1-2). Highway access to Gray is provided by U.S. Route 202, and State Routes 4, 26, 100, and 115. Gray also is served by Exit 11 of the Maine Turnpike, designated Interstate Route 495 in this area.

3.2.1 Highway Network

The following describes the primary highway corridors within the Study Area.

State Route 26 (Route 26) is a rural arterial running south/north through Gray Village and the Study Area. It carries through and local traffic traveling through the Study Area. Route 26 is a two-lane highway with a posted speed limit of 48 km per hour (30 mph) through Gray Village. Urban characteristics exist within Gray Village including paved shoulders, with sidewalks on one or both sides. Outside of Gray Village, rural characteristics exist including rolling terrain with limited paved and often gravel shoulders. Businesses and homes are predominant in the urban sections, while scattered homes can be found in rural sections.

State Route 4/US Route 202 (Routes 4/202) is a rural arterial running southwest and northeast outside of Gray Village and the Study Area. It carries both through and local traffic traveling through the Study Area. Routes 4/202 intersect Route 26 in Gray Village. Routes 4/202 is a two-lane highway with a posted speed of 72 km per hour (45 mph) outside of Gray Village. Rural characteristics include rolling terrain with limited paved and often gravel shoulders. Within Gray Village, urban characteristics are similar to Route 26. Businesses and homes are predominant in the urban sections, while scattered homes can be found in rural sections.

State Route 100 (Route 100) is a rural arterial running south/north through Gray Village and the Study Area. It carries through and local traffic traveling through the Study Area. Route 100 is a two-lane highway with posted speeds of 48 km per hour (30 mph)

through Gray Village and 72 km per hour (45 mph) outside Gray Village. Rural characteristics include rolling terrain with limited paved and often gravel shoulders. Urban characteristics are similar to Route 26. Businesses and homes are predominant in the urban sections, while scattered homes can be found in rural sections.

State Route 115 (Route 115) is a rural arterial traveling west/east through Gray Village and the Study Area. It carries local and through traffic from Yarmouth and Windham. Route 115 is a two-lane highway with a posted speed of 72 km per hour (45 mph) outside of Gray Village. Urban and rural characteristics are similar to Route 26.

3.2.2 Other Modes

Non-highway transportation facilities in or around the Study Area are limited. These facilities are described in Section 2.2.1, page 2-1.

3.2.3 Traffic Volumes

The Maine Turnpike Gray/New Gloucester Access Study, Final Location Study Report. January 1999 (MTA Study) documented 1995 traffic conditions in a Study Area much broader than the Study Area for this Environmental Assessment (EA). Data from the MTA Study was reviewed and updated with additional traffic counts conducted in the summer of 2000 to document base year (2000) traffic data for analysis in this EA.

Historic traffic data from 1995 to 2000 indicates that daily and peak hour traffic traveling through the Study Area has grown at annual rates of approximately 2.0 percent and 1.8 percent, respectively. Due to the level of congestion within Gray Village, where capacity constraints limit the growth in traffic, growth in peak hour traffic volumes has been slower than growth in daily levels. Some traffic shifting from Routes 26/100 to the Maine Turnpike was noted as a result of the Maine Turnpike Authority's conversion to a closed barrier toll system in 1997.

Existing (2000) daily and PM peak hour traffic volumes in the Study Area are illustrated on Table 3-1, page 3-3. Future year 2025 traffic volumes also are illustrated in Table 3-1. These future year volumes are based on the No-Build Alternative, for which the existing road network remains in place with no improvements made in the Study Area. These are forecasted conditions under a "do-nothing" scenario. Over the 25 year period from the base year, 2000, to the design year, 2025, traffic volumes on the Study Area roads are forecasted to grow between 50 percent and 95 percent.

3.2.4 Levels of Service

Levels of Service (LOS) for the existing (2000) conditions at three signalized and one unsignalized intersection in the Study Area are:

- The intersections in Gray Village operate at acceptable levels (LOS D or better) in the AM peak hour and at or near capacity (LOS E or worse) in the PM peak hour.
- The intersection of Routes 4/115/202 and Maine Turnpike Exit 11 interchange operates at LOS C in the AM peak hour and LOS E in the PM peak hour.
- The unsignalized intersection of Route 26 and Libby Hill Road operates at LOS E (Libby Hill Road approach) in the AM peak hour.

**Table 3-1
Traffic Volumes, Existing Year 2000 and Future Year 2025**

| Road | Existing Average Daily Traffic (Vehicles per day) | Existing PM Peak Hour Traffic (Vehicles per hour) | Year 2025 Average Daily Traffic (Vehicles per day) | Year 2025 PM Peak Hour Traffic (Vehicles per hour) |
|---|--|--|---|---|
| Routes 26/100, south of Gray Village | 12,370 | 899 | 18,650 | 1,355 |
| Route 26, north of Gray Village | 17,850 | 1,517 | 29,510 | 2,512 |
| Routes 4/100/202, north of Gray Village | 13,600 | 1,112 | 21,600 | 1,767 |
| Routes 4/115/202, west of Exit 11 | 14,130 | 1,193 | 23,140 | 1,959 |
| Routes 115, east of Gray Village | 6,050 | 444 | 9,780 | 716 |
| Brown Street, east of Gray Village | 2,980 | 374 | 4,470 | 563 |
| Maine Turnpike Exit 11 | 15,050 | 1,234 | 29,350 | 2,406 |

LOS analyses of highway sections were performed for the existing (2000) conditions at nine (9) segments. The results of the LOS analysis indicate that:

- All but one segment of the highway sections are at LOS D or better in the AM peak hour (Route 26 between the overpass of the Maine Turnpike and Libby Hill Road).
- Three of the segments operate at LOS E during the PM peak hour (Route 26 between Gray Village and the overpass of the Maine Turnpike; Route 26 between the overpass of the Maine Turnpike and Libby Hill Road; and Route 26 between Libby Hill Road and Dry Mills).

Future year 2025 levels of service would universally deteriorate as a result of the growth in traffic noted in Section 3.2.3, page 3-2, and without any road improvements in the Study Area. LOS at both Gray Village intersections would be LOS F, with average stopped delays of up to 3.36 minutes per vehicle. LOS at the intersection of Routes 4/115/202 and Maine Turnpike Exit 11 would be LOS F, with average stopped delays exceeding six minutes per vehicle. The intersection of Route 26 and Libby Hill Road would operate at LOS F, with delays on Libby Hill Road exceeding two minutes per vehicle. LOS on Route 26, north of Gray Village, and on Routes 4/115/202, west of Maine Turnpike Exit 11, would deteriorate to LOS F and LOS E, respectively.

3.2.5 Crash History

There are five designated High Crash Locations (HCL) in the Study Area. Both Gray Village intersections are HCLs, as is the intersection of Routes 4/115/202 with Maine Turnpike Exit 11. The segment of Routes 4/115/202 between McConkey Road and Maine Turnpike Exit 11 is an HCL, as is the segment of Route 26 between Gray Village

and Gray Park Road. Routes 26/100, south of Gray Village at the edge of the Study Area, also is an HCL. Crash history data between 1998 and 2000 are shown on Table 3-2.

**Table 3-2
Three-Year Crash History, 1998 to 2000**

| Node (Intersection) Name | MDOT Node Number | Total # of Crashes (3-year Period) | Critical Rate Factor (CRF) | High Crash Location (Yes/No) |
|---|--------------------------|---|-----------------------------------|-------------------------------------|
| Routes 4/115/202 at McConkey Road | 6165 | 1 | 0.18 | NO |
| Exit 11 at Routes 4/115/202 | 9722 | 17 | 2.24 | YES |
| Routes 4/115/202 at Route 26/100 South (Gray Village) | 7513 | 63 | 1.56 | YES |
| Routes 4/100/202 at Route 26 North (Gray Village) | 7530 | 16 | 1.28 | YES |
| Route 115 at Brown Street | 5111 | 1 | 0.5 | NO |
| Routes 4/100/202 at Colley Hill Road | 7531 | 1 | 0.18 | NO |
| Link (Roadway) Name | MDOT Link Numbers | Total # of Crashes (3-year Period) | Critical Rate Factor (CRF) | High Crash Location (Yes/No) |
| Routes 26/100, south of Gray Village, between Rtes 4/115/202 and Gray Marketplace | 7513/8102 | 20 | 1.45 | YES |
| Route 26 north of Gray Village, between Gray Village and Gray Park Rd. | 7530/7666 | 28 | 2.87 | YES |
| Routes 4/115/202 between McConkey Road and Exit 11 | 6165/9722 | 19 | 1.04 | YES |

3.3 Physical and Biological Environment

3.3.1 Soils and Geology

Two types of glacial deposits dominate the Study Area, fine textured marine and coarser textured outwash (Weddle and Marvinney, 1997). The southern half of the Study Area is dominated by marine deposits, which are primarily silts and clays of the Presumpscot formation. The landscape is gently rolling with areas of branching steep-sided stream gullies. The soils within this area are low permeable silt loams, including poorly drained Scantic and moderately well drained Buxton soils with inclusions of very poorly drained organic soils (Hedstrom, 1974).

The northern portion of the Study Area contains steeper slopes with hills (kame terraces and kame deltas) and depressions (kettles), which formed adjacent to glacial ice and are referred to as the Libby Hill Delta located north of the Maine Turnpike and Route 26 overpass (Weddle and Marvinney, 1997). The eastern portion of the Study Area contains a second deposit, referred to as the Gray Delta, which extends along the Route 26 corridor, beginning approximately 366 meters (1,200 feet) south of the Maine Turnpike overpass.

A kettlehole bog is located in the northwest section of the Study Area. The site was identified in a study for the Critical Areas Program but was not recommended as a significant kettlehole based on program criteria for the state (Timson and Pickart, 1992). The kettlehole is located within the Libby Hill Delta.

3.3.2 Water Resources

Groundwater

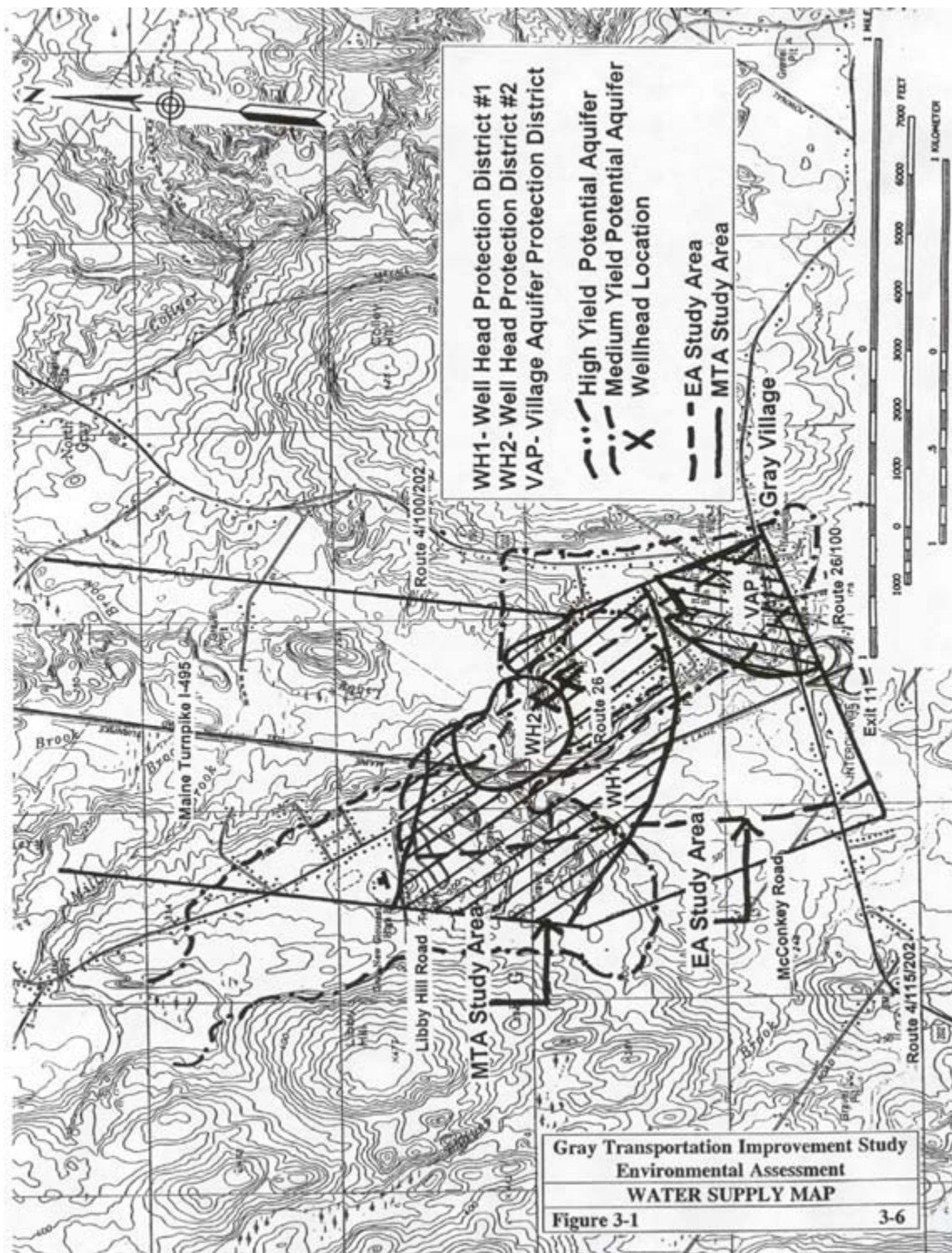
The principal groundwater resource in the Study Area is the Gray Water District (GWD) water supply wells located to the southeast of the Maine Turnpike and Route 26 overpass (Figure 3-1, page 3-6). These wells are supplied by two Significant Sand and Gravel Aquifers as well as bedrock groundwater resources (Tewhey, 1997).

Groundwater recharge is provided by two areas of Significant Sand and Gravel deposits which are located in the Study Area and near the GWD water supply wells (Tewhey 1997; Tepper et al. 1985; Neil et al. 1999). The first area, with moderate-to-good potential groundwater yield, underlies much of the Study Area and extends from the west-northwest of the GWD wells on the west side of the Maine Turnpike in the northern portion of the Study Area to the southern portion of the Study Area. The second area is located to the east-southeast of the GWD wells on the east side of the Maine Turnpike, most of which is within the Study Area.

Bedrock groundwater resources including five linear features and two recharge zones are present in the Study Area, although to a much lesser degree than the Sand and Gravel Aquifer (Caswell, Eichler and Hill Inc., 1986). Two linear features are located in the southern end of the Study Area in the vicinity of Thayer Brook and Routes 4/115/202. Two additional linear features were mapped in the vicinity of the GWD water supply wells, one oriented northeast to southeast and the other oriented southeast to northeast. One bedrock recharge zone was depicted in the vicinity of the GWD water supply wells in the area between Route 26 and Routes 4/115/202. An additional linear feature is located almost parallel to Route 26 to the northeast of the Maine Turnpike overpass. A recharge zone is located in this area and in the area to the southwest of the Maine Turnpike/Route 26 overpass. A high-yield bedrock well with a yield ranging from 95-185 liters per minute (25 to 49 gallons per minute) is shown at the north end of this linear feature, southeast of Crystal Lake, outside of the Study Area.

Surface Water

The Study Area encompasses two watersheds, Thayer Brook to the south and Libby Brook to the north (Figure 3-2, page 3-7). The southern half of the Study Area drains into an unnamed tributary, which flows west from a Palustrine Emergent Wetland





(Wetland W2, Section 3.3.6, page 3-10) into Thayer Brook. The northern portion of the Study Area drains into an unnamed stream, which flows from a Palustrine Forested Wetland (Wetland W3, page 3-10) north under the Maine Turnpike and Route 26 into Libby Brook. Three unnamed isolated waterbodies, located in the northwestern portion of the Study Area, are the result of sand and gravel operations and have been identified in the wetland survey as Wetland W3-1. The third area is a kettlehole wetland (Wetland W4) which is described in more detail in Section 3.3.6, page 3-10.

According to the Maine Water Standards Classification System (M.R.S.A., 38 § 465), Thayer and Libby Brooks are classified as Class B waters. Class B waters “shall be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; recreation in and on the water; industrial processes and cooling water supply; hydroelectric power generation, except as prohibited under M.R.S.A., 200 Title 12, §403; navigation; and as habitat for fish and other aquatic life.” The habitat shall be characterized as unimpaired.

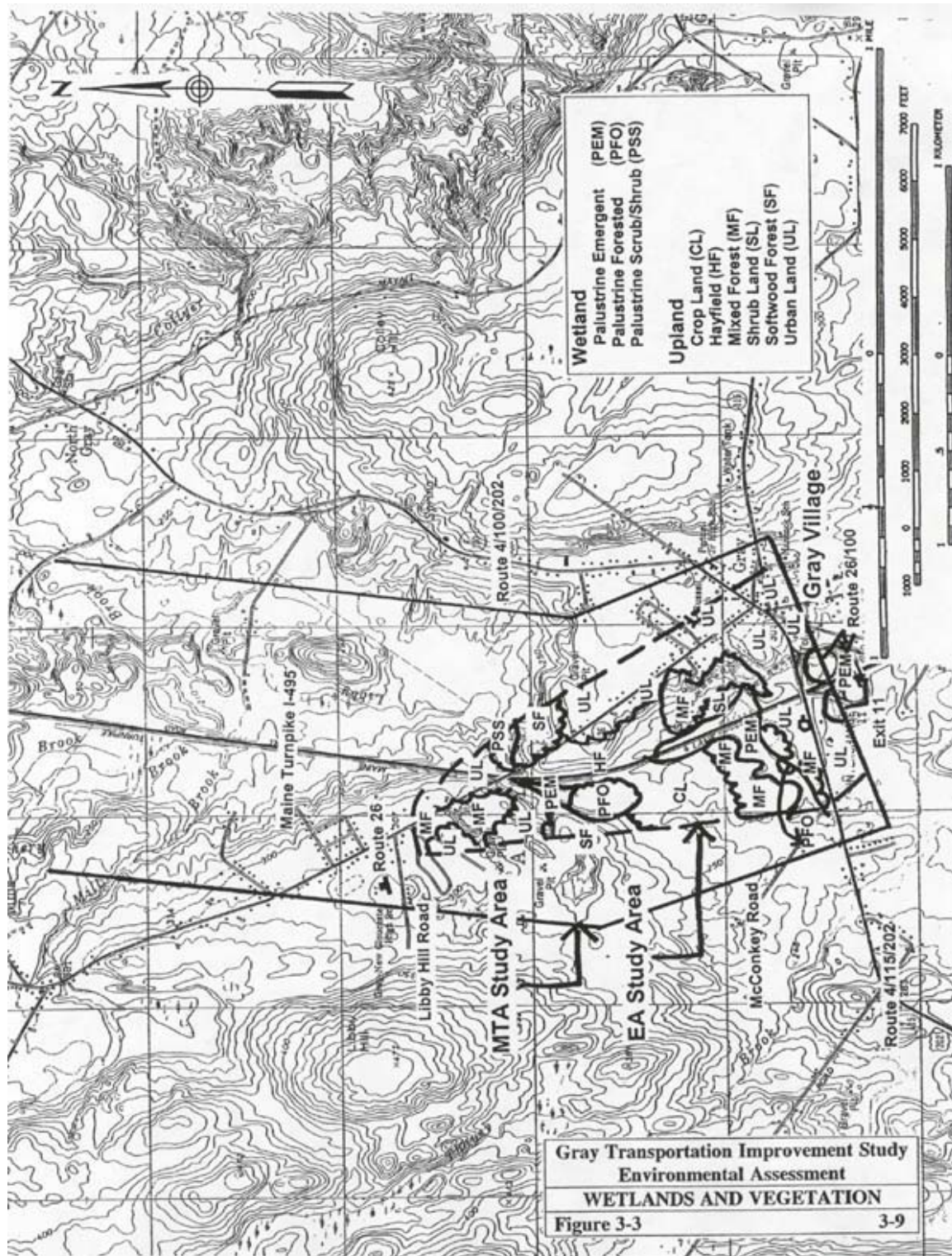
Discharges to Class B waters shall not cause adverse impact to aquatic life in that the receiving waters shall be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community.

3.3.3 Vegetation

Figure 3-3, page 3-9 illustrates the vegetation within the Study Area. There is a small area of woodland that extends along Routes 4/115/202 towards McConkey Road along the southeastern quadrant of the Study Area. This area has been fragmented by development along the road as well as a small industrial park. The largest block of undisturbed forestland is in the northwest section of the Study Area. This forestland consists primarily of softwood vegetation (SF) and has been fragmented by gravel mining, which includes disturbed areas within the active pits and shrubby or herbaceous depressions where the pits have been abandoned long enough for early successional plant communities to develop. Areas within these pits have been excavated deep enough to assume wetland characteristics either by intersecting the seasonal water table or through an impervious layer. The southern half of the Study Area is dominated by three vegetative communities, mixed forest (MF) of hardwood and softwood, softwood forest (SF) and cultivated cropland (CL). The softwood forest (SF) occurs primarily in two stands separated by a large field cultivated primarily to silage corn.

Upland portions of the mixed forest (MF) and softwood forest (SF) in the Study Area belong in the white pine-mixed hardwoods forest ecosystem, a type transitional between the spruce-fir-northern hardwoods ecosystem prevalent farther north in Maine and the oak-hickory forest ecosystem characteristic of extreme Southern Maine, e.g. York County (Maine Natural Areas Program, 1991). White Pine (*Pinus Strobus*) and eastern hemlock (*Tsuga canadensis*) are the principal evergreen trees, with red oak (*Quercus rubra*); American Beech (*Fagus grandifolia*) and sugar maple (*Acer saccharum*) are important deciduous species.

The cropland is used for the production of silage corn, which is an annual crop. Based on site observations, conducted in the Fall of 2001, the fields are not seeded with a cover crop during the winter. Wetland areas within the cultivated area of cropland



indicate little of their potential species composition, owing to the annual disturbance during cultivation.

The area east of the Maine Turnpike between Routes 4/115/202 and Route 26 includes undeveloped areas. These undeveloped areas are dominated by hayfields (HF), mixed forest (MF) and shrubland (SL). Plants within the old field areas include early successional species such as birch, (*Betula* spp.), Quaking Aspen (*Populus tremuloids*) Gold Rub (*Solidago* spp.) Brambles (*Rubus* spp.) and various grasses.

3.3.4 Wildlife

The southern end of the Study Area includes a tributary to Thayer Brook, which is bordered by a softwood forest upland. Stream corridors are often used for travel by animals that prefer or depend on moving under cover of this habitat type, including species ranging in size from a wood frog (*Rana sylvatica*) to moose (*Alces alces*), which are found within the region. The east-west movement of all fauna is ultimately limited by the Maine Turnpike. Currently, only relatively small animals potentially can cross under the Maine Turnpike using an existing culvert. The culvert's function is to transport water under the Maine Turnpike structure. The wetlands within the Study Area provide habitat for numerous species, including birds, mammals, amphibians, and insects. There are no state mapped vernal pools within the Study Area and a review of wetlands confirmed that there are no potential amphibian breeding pools.

Approximately 1.14 sq km (0.44 sq mi) of land located west of the Maine Turnpike within the Study Area is in the Gray Game Sanctuary, a state regulated area. This area does not have any development restrictions, and therefore development has occurred in accordance with zoning. Currently, hunting and trapping is forbidden within the sanctuary.

3.3.5 Aquatic Habitats

No major watercourses or perennial streams are located within the Study Area. The Study Area is within the headwaters of two streams, Thayer and Libby Brooks (Figure 3-2, page 3-7). Their associated unnamed tributaries are intermittent within the Study Area. Libby Brook begins at a culvert that crosses under the Maine Turnpike approximately 76 meters (250 feet) south of the Route 26 overpass. The MDIF&W considers Libby Brook to have moderate fisheries habitat value as it supports good populations of wild self-sustaining brook trout. The brook is spring fed and maintains its cool water temperatures throughout the summer months, which are vital to the survival of these trout fisheries (Boland, 2001). A tributary to Thayer Brook (Figure 3-2, page 3-7) extends into Wetland W2 (see Figure 3-4, page 3-12). MDIF&W did not identify this tributary as having any fisheries habitat.

3.3.6 Wetlands

During the MTA Study, freshwater wetlands were identified using aerial photography and limited ground truthing. Wetland function was assessed for wetlands within the Study Area. The rationale used in the evaluation of wetland characteristics relative to each of the 13 functions are provided in the U.S. Army Corps' Highway Methodology Supplement (ACOE, 1995). Functions and values considered principal have been

identified as an important physical component of a wetland ecosystem and/or are considered of special value to society.

The southern portion of the Study Area is within the Thayer Brook watershed, which includes four wetlands (SC5, W1, W2, E1; Figure 3-4, page 3-12). The northern portion of the Study Area is within the Libby Brook watershed and includes three wetlands (W3, W4, E3; Figure 3-4, page 3-12). The wetlands are classified within the Palustrine, freshwater system according to the U.S. Fish and Wildlife Classification System (Cowardin et al. 1979). The following classes based on cover type were observed: Palustrine Emergent (PEM), Palustrine Forested (PFO), and Palustrine Shrub-Scrub (PSS), Figure 3-3, page 3-9). Each of these wetlands is described below.

Wetland SC5

Wetland SC5 is 4 hectares (10 acres) in size, having been fragmented by the Maine Turnpike and commercial development. It extends from Routes 4/115/202 south almost to Old Portland Road, along the western side of the Maine Turnpike. The outlet of this wetland is an intermittent watercourse, which flows from the northern portion of the wetland west into a tributary of Thayer Brook. Wetland SC5 receives flows from adjacent uplands as well as culverts that link wetlands to the east of the Maine Turnpike (Wetland E1) and to the north (Wetlands W1 and W2) across Routes 4/115/202. The southern portion of the wetland is a shrub swamp (classified as Palustrine Shrub/Shrub, PSS) with speckled alder (*Alnus incana*), winterberry holly (*Ilex verticillata*), etc., bordered primarily by woodland. The northern portion of the wetland is an emergent cattail marsh (classified as a Palustrine Emergent Marsh, PEM), which has been impacted previously by fill from a parking lot as well as from the construction of the Maine Turnpike.

The principal functions of Wetland SC5 include groundwater discharge, floodflow alteration, water quality improvement, production export, and wildlife habitat. This wetland discharges flow into an unnamed intermittent tributary of Thayer Brook.

Wetland W1

Wetland W1 is a small wetland approximately 0.1 hectares (0.3 acres) in size fragmented into three separate segments by the construction of an access road to an industrial park, as well as impacted by ditching during the installation of a culvert. This wetland is located to the north of Routes 4/115/202, west of the Maine Turnpike's Gray Maintenance Area, and east of a commercial facility.

Wetland W1 is classified as a Palustrine Emergent Marsh (PEM) (Figure 3-3, page 3-9). The vegetation includes goldenrod species (*Solidago* sp.), grasses, cattail, blue-joint grass, and meadowsweet. There is no watercourse associated with the wetland, which is linked by a culvert to a wetland (SC5) south of Routes 4/115/202.

The principal function of Wetland W1 is groundwater discharge and sediment/toxicant retention of material received from the roads and the Maine Turnpike parking lot. This wetland receives flow from adjacent uplands and discharges flow through a culvert to a wetland (SC5) south of Routes 4/115/202. The extent of retention has been limited by ditching within the wetland.



Wetland W2

Wetland W2 is approximately 4.0 hectares (10 acres) in size, and extends from the Maine Turnpike west to McConkey Road and then south via a culvert under Routes 4/115/202, eventually linking with the Thayer Brook wetland system. Wetland E1, located to the east of the Maine Turnpike, was once a part of Wetland W2. Currently, Wetlands E1 and W2 are linked by a culvert. Wetland W2 recently has been impacted by a new road crossing for a commercial facility. Cover types within this wetland include Palustrine Emergent Marsh (PEM) and Palustrine Forested Wetland (PFO) (Figure 3-3, page 3-9). A narrow segment of the PEM extends north, parallel and adjacent to the Maine Turnpike, into a large cornfield. In addition, a PFO land and adjacent upland separates the PEM from narrow wet meadow swales within the cornfield. The vegetation within the PEM includes cattail and blue-joint grass, with common winterberry holly (*Ilex verticillata*), alder and red maple (*Acer rubrum*) along the marsh edge. Shallow rooted eastern hemlock (*Tsuga canadensis*) and red oak (*Quercus rubra*) are common within the Palustrine Forested Wetland.

Wetland W2 has the following principal functions: groundwater discharge/recharge, floodflow alteration, water quality improvement, production export, and wildlife habitat. Sources of groundwater discharge from this wetland include a spring located at the southeastern edge of Wetland E1 as well as adjacent uplands. The wetland overlies a mapped Sand and Gravel Aquifer (Figure 3-1, page 3-6), which W2 may recharge. Wetland W2 assists in floodflow alteration as it is near the head of the Thayer Brook watershed. Currently, W2 functions in water quality improvement through treatment of sediments and toxicants received from the Maine Turnpike and Maine Turnpike parking lot, which contains a salt storage area in the northwest corner. Drainage from the salt storage area enters Wetland W2 through an intermittent drainage swale. This wetland provides diverse wildlife habitat primarily for small mammals, birds, insects, and amphibians.

The decomposition of detritus within the wetland generates nutrients, which are transported from the wetland downstream to support freshwater fisheries. In addition, this wetland provides diverse wildlife habitat through a mix of cover types as well as a source of water. Wetland W2 is within the Gray Game Sanctuary, a state-regulated area. This wetland was reviewed for potential amphibian breeding habitat. It was determined that there is inadequate water depth for successful amphibian breeding within the wetland.

Wetland E1

Wetland E1 (Figure 3-4, page 3-12) is located east of the Maine Turnpike and is approximately 1.2 hectares (3 acres) in size. Prior to construction of the Maine Turnpike this wetland was part of Wetland W2 and now is linked by a culvert. This wetland extends north parallel to the Maine Turnpike, receiving runoff from adjacent uplands and wetlands. Wetland E1 is classified as a Palustrine Emergent Marsh (PEM) (Figure 3-3, page 3-9). Adjacent land uses include mowed fields; old fields growing to shrubs and saplings, forested uplands and an old borrow pit. A spring is located in the southeast section of the wetland near the borrow pit.

Wetland vegetation in Wetland E1 includes blue-joint grass (*Calamagrostis canadensis*), cattail (*Typha latifolia*), sensitive fern (*Osmunda sensibilis*), speckled alder (*Alnus incana*), red-osier dogwood (*Cornus stolonifera*), meadowsweet (*Spirea latifolia*), and steeple-bush (*Spirea tomentosa*). A species of yellow cress (*Rorippa* sp..) was observed in the area of the spring.

The principal function of Wetland E1 includes groundwater discharge, water quality improvement, and wildlife habitat. Groundwater discharges from the spring year-round. The wetland functions in water quality treatment of sediments and toxicants, as it receives runoff from the Maine Turnpike. Diverse wildlife habitat and a constant source of water are also provided by the wetland.

Wetland W3

Wetland W3 is located to the west of the Maine Turnpike and south of Route 26 (Figure 3-4, page 3-12). This wetland is approximately 2 hectares (5 acres) in size and is considered a wooded/shrub swamp/emergent marsh within the Libby Brook watershed. The southern portion of W3 is a red maple swamp (PFO), which borders a large cornfield to the south. A ditch, which drains adjacent cropland, runs along the southeastern edge of the wetland. A Palustrine Emergent Marsh/Palustrine Shrub-Shrub Wetland (PEM/PSS) extends north parallel to the Maine Turnpike (Figure 3-3, page 3-9).

The wetland vegetation includes maleberry (*Lyonia liqustrina*), speckled alder, common winterberry, blue-joint grass and cattail. The outlet of the wetland has been constricted by the Maine Turnpike to the east and an old access road to the west. A culvert links Wetland W3 with wetlands associated with Libby Brook. This is a tributary to Libby Brook and is an intermittent watercourse lacking well defined banks within the Study Area.

The principal functions of Wetland W3 are groundwater discharge/recharge, floodflow alternation, water quality improvement, wildlife habitat, and visual quality/aesthetics. The adjacent uplands to the west and north are glacial outwash deposits of moderately coarse textured material. Groundwater is discharged from these deposits into the wetland, which has formed in a nearly-level basin of marine/lacustrine deposits. In addition, the wetland may function in groundwater recharge as it overlies a mapped Sand and Gravel Aquifer (Figure 3-1, page 3-6). The wetland functions in water quality improvement through sediment and nutrient entrapment and breakdown from runoff received from the Maine Turnpike and adjacent cropland. The wetland provides floodflow storage due to a combination of nearly level topography and a culvert limiting outflow. This wetland provides a wildlife buffer from the Maine Turnpike and farmland as well as diversified habitat for various wildlife species. Wetland W3 is within the Gray Game Sanctuary, where hunting and trapping is prohibited, offering protection to some wildlife species. The wetland provides visual quality to users of the Maine Turnpike due to the diversity of its habitat in conjunction with adjacent uplands.

Wetland W4

Wetland W4 is approximately 0.08 hectares (0.2 acres) in size and is a shrub peatland (classified as a PSS/PEM) wetland located within a kettlehole located 30 meters (100

feet) south of Route 26 (Figure 3-3, page 3-9; Figure 3-4, page 3-12). The sideslopes of the kettlehole are 15 meters (50 feet) high with 30 percent to 40 percent slopes. The wetland vegetation identified includes sweet gale (*Myrica gale*), labrador tea (*Ledum groenlandicum*), sheep laurel (*Kalmia angustifolia*), *Sphagnum* sp., black spruce (*Picea mariana*), common winterberry, and silky dogwood (*Cornus amomum*). The wetland would be classified by the Maine Natural Areas Program as a floating Kettlehole Bog Community, which is listed as Apparently Secure in Maine (Maine Natural Heritage Program, 1991).

This site has been identified in a study for the Maine Critical Areas Program (Timson and Pickart, 1992), which assessed the relevance of kettlehole features to the Critical Areas Program. It was not recommended as a significant kettlehole based on program criteria for the state. On a local level, this site may have some educational interest, as it is located within 0.8 kilometer (0.5 mile) of the high school, although access would have to be arranged.

Wetland W4 has the following principal functions: wildlife habitat, educational value (potential), and uniqueness/heritage. The wetland provides wildlife habitat in an area of mixed residential and commercial development. Although not uncommon in Maine, kettlehole bogs such as Wetland W4 and a wetland to the south about 518 meters (1,700 feet), are uncommon in southern Maine.

Wetland E3

Wetland E3 is approximately 4 hectares (10 acres) in size and is a Palustrine Forested Wetland (PFO), which is within the Libby Brook watershed (Figure 3-3, page 3-9; Figure 3-4, page 3-12). Wetland E3 is situated on a broad, nearly level marine/lacustrine plain with inclusions of uplands on glaciofluvial deposits. The dominant wetland species include red maple, specked alder, poplar, maleberry, cattail, *Juncus* sp., and green bulrush (*Scirpus atrovirens*). White pine dominates the adjacent uplands.

The principal functions of Wetland E3 include groundwater discharge, floodflow alternation, water quality improvement, and wildlife habitat. Sources of groundwater include adjacent uplands. This wetland functions in floodflow alteration as it is within the headwaters of Libby Brook. The potential for water quality improvement is high adjacent to the Maine Turnpike as runoff from the road transports sediment and toxicants into the wetland. The diverse habitat of Wetland E3 provides wildlife habitat for deer, small mammals, and birds.

Wetland W3-1

Wetland W3-1 includes three areas (Figure 3-4, page 3-12). Two ponded areas have been created within a gravel pit as a result of excavation either reaching groundwater or an impervious layer. Vegetation is limited within these areas to early successional species. Ponded conditions are assumed to be permanent. These areas are classified as Palustrine Unconsolidated Bottom (PUB) (Figure 3-3, page 3-9). A third area to the south of the gravel operation is a small kettlehole bog similar to Wetland W4. This wetland is an undisturbed kettlehole bog, which is classified as PEM (Figure 3-3, page 3-9). The principal function of these areas is groundwater recharge due to their relationship to the aquifer and lack of outlets.

3.3.7 Floodplains

The Flood Insurance Study for the Town of Gray, as conducted by the Federal Emergency Management Agency, did not identify any floodplains within the Study Area (Federal Emergency Management Agency, 1982).

3.3.8 Threatened and Endangered Species and Other Species

The Maine Natural Areas Program reviewed their database and found no record of rare botanical features documented specifically within the Study Area (Pinkham 2000; Holbrook 1996).

The Maine Department of Inland Fisheries and Wildlife (MDIF&W) reviewed their files and did not identify any rare, threatened, or endangered fish species inhabiting the area (Boland, 2001). MDIF&W also indicated that there are no Significant Wildlife Habitats within the Study Area (Bozenhard, 2001).

The US Fish and Wildlife Service (USFWS) indicated that there are no federally-listed species under the jurisdiction of USFWS within the Study Area, with the exception of transient bald eagles (*Haliaeetus leucocephalus*), therefore no further action is required under Section 7 of the Endangered Species Act (1973).

3.4 Atmospheric Environment

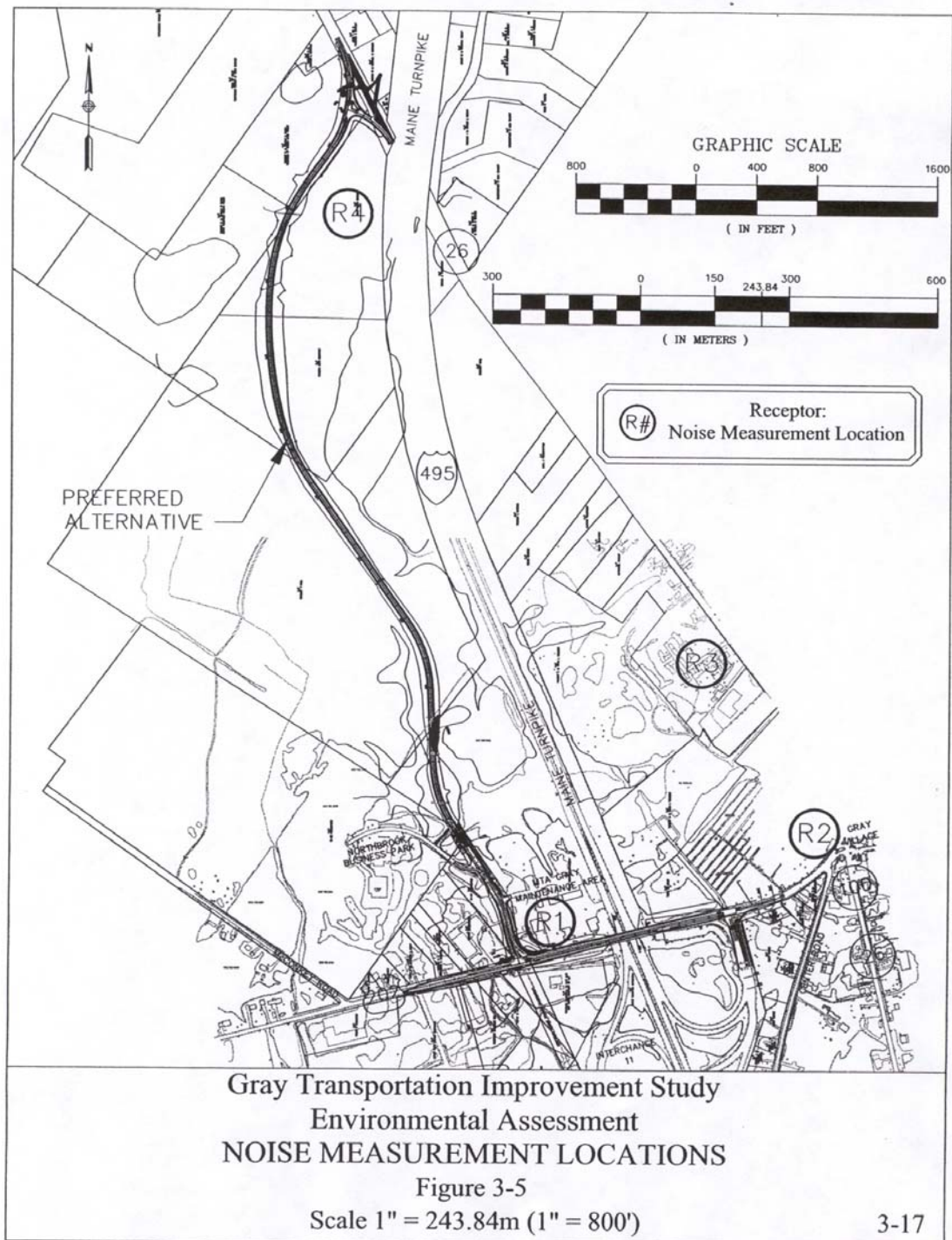
3.4.1 Air

York and Cumberland Counties in Maine, which include the Study Area, are currently classified by the EPA as in attainment (compliance) for all criteria pollutants, except for ozone. The region is presently classified as a Moderate Ozone Nonattainment Area, pursuant to the Clean Air Act Amendments of 1990.

The region in which the Study Area is located is currently in attainment for carbon monoxide (CO) and lead (Pb). In 2001, there were no MDEP-operated monitoring stations in the vicinity of the Study Area that can be used to represent existing CO levels in the Study Area. However, ambient CO and Pb concentrations in the Study Area are expected to be typical (i.e., well below ambient National Ambient Air Quality Standards-NAAQS) of rural highway corridors and in compliance with CO NAAQS of 35 parts per million 1-hour concentrations and Pb NAAQS of 9 parts per million 8-hour concentrations.

3.4.2 Noise

A noise monitoring program was conducted on May 7, 2001 to measure existing Leq noise levels within the Study Area. Four locations were selected to be representative of receptors that would potentially be most affected by the alternatives and changes in traffic patterns on nearby roads. Figure 3-5, page 3-17 shows the noise measurement locations. Noise measurements were obtained at two residential locations near major roads and at two locations in commercial areas. The major existing noise sources in these areas are traffic on major roads, and occasional vehicles on local secondary



streets. Existing noise levels at the receptors are below FHWA Noise Abatement Criteria (NAC).

The measured noise levels are summarized in Table 3-3.

**Table 3-3
Noise Measurement Results**

| Receptor No. | Description | Measurement | | Hourly Leq | FHWA Noise Abatement Criteria |
|--------------|--|-------------|----------------|--------------|-------------------------------|
| | | Date | Period | | |
| R1 | Routes 4/115/202 Commercial | 05/07/01 | AM-PK PM-PK | 56.6 57.2 | 72 |
| R2 | Routes 4/115/202 and Route 26/100 Intersection (Gray Village) Commercial | 05/07/01 | AM-PK PM-PK | 67.6 67.4 | 72 |
| R3 | Route 26 (at #37 Shaker Road) Residence | 05/07/01 | AM-PK PM-PK | 59.5 60.5 | 67 |
| R4 | Route 26 near Maine Turnpike overpass Residence | 05/07/01 | AM-PK PM-PK | 61.9 61.5 | 67 |

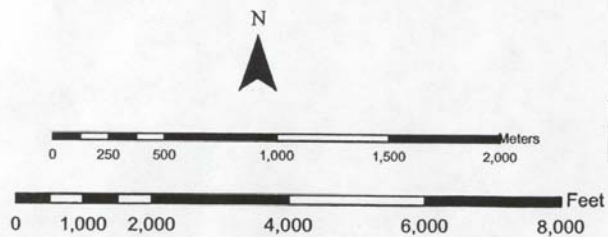
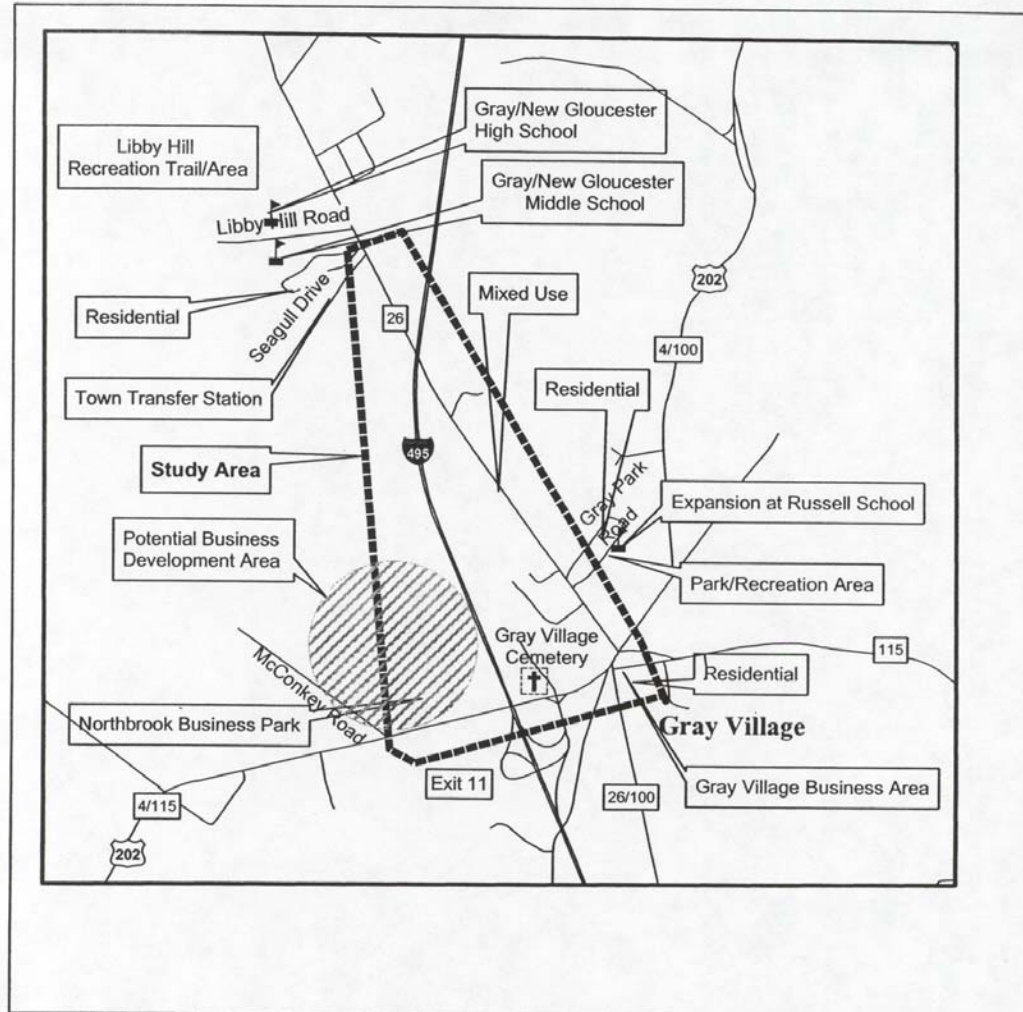
3.5 Land Use, Historic, and Socioeconomic Environment

3.5.1 Land Use and Right-of-Way

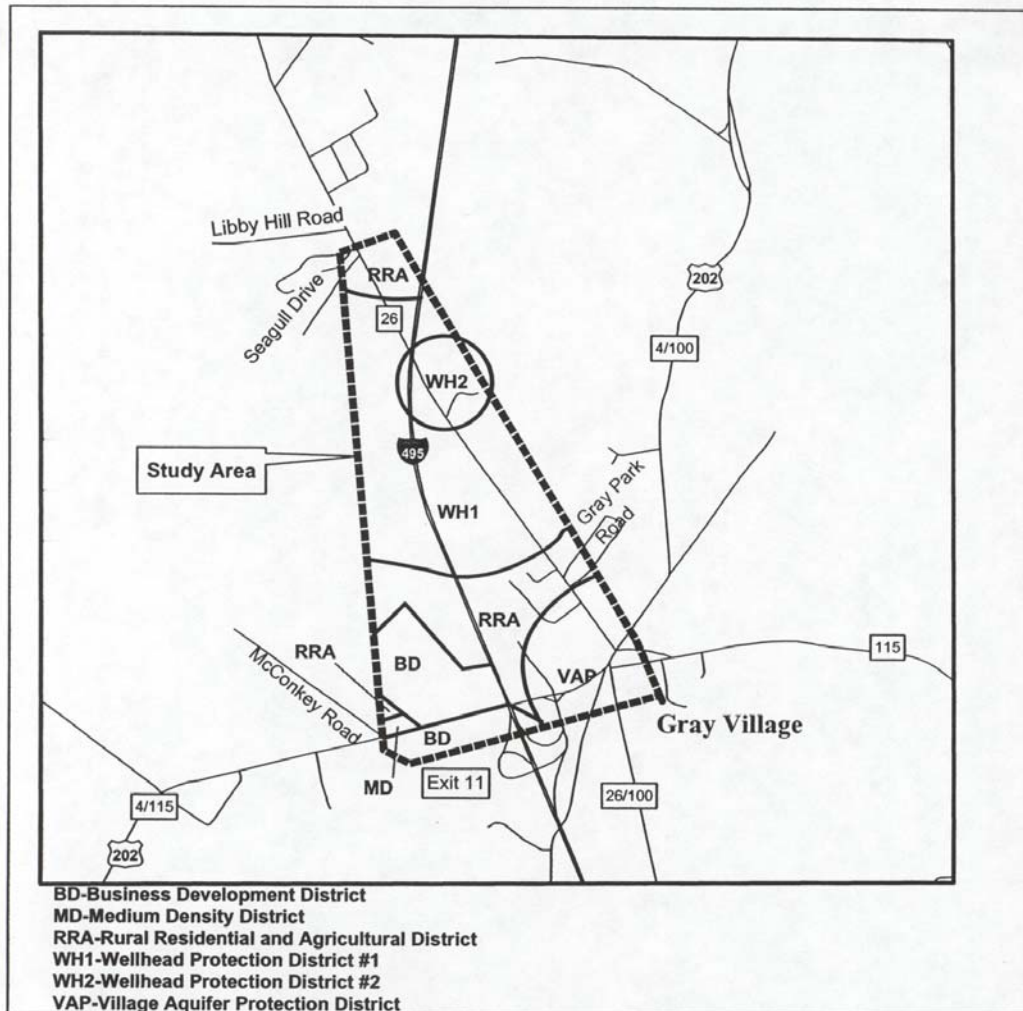
Land use in the Study Area is predominately single family rural residential, intermixed with farmland, and large tracts of open space. Property within Gray Village is more densely developed, with land uses consisting of a mixture of commercial, residential, and municipal uses, which is representative of a town center. Land use north of Gray Village along Route 26 is a mixture of commercial, residential and municipal uses. The Town Fire and Rescue Station, and the Town Transfer and Recycling Center are located on Seagull Road, which intersects with Route 26 (Figure 3-6, page 3-19). West of this area is Libby Hill Road, where the Gray/New Gloucester Middle and High Schools are located. More residential development is scattered on either side of Route 26 just past Libby Hill Road.

Northeast from Gray Village along Routes 4/100/202, land use becomes more concentrated and includes the Town's Recreation Department, a newspaper office, and the Town Library (Figure 3-6, page 3-19).

As stated within the Town of Gray's Comprehensive Plan and zoning ordinance, additional non-residential uses are encouraged to be located away from Gray Village due to development constraints of the aquifer located in the same proximity (Figure 3-7, page 3-20). In addition, the Comprehensive Plan states Gray Village should continue to be an active retail and service center. However, due to environmental constraints related to possible contamination to the adjacent aquifer, Gray Village is not expected to be the site of any major new development or any increase in intensity.



| | |
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| Gray Transportation Improvement Study Environmental Assessment | |
| LAND USE | |
| Figure 3-6 | 3-19 |



| | |
|---|------|
| Gray Transportation Improvement Study Environmental Assessment | |
| ZONING | |
| Figure 3-7 | 3-20 |

Zoning

On June 1, 1994, the Town of Gray adopted zoning ordinances which have followed the guidance of the Town's Comprehensive Plan. The Gray Comprehensive Plan was adopted in May 1991. Figure 3-7, page 3-20 illustrates the general zoning districts within the Study Area. The majority of the Study Area is zoned Rural Residential and Agricultural District (RRA). Gray Village is zoned as Village Aquifer Protection District (VAP), which limits the density of development to protect the groundwater resources beneath it. Located northwest of Routes 4/115/202 is the Medium Density District (MD), which permits single and two family houses, home occupations, and schools. Located west of Gray Village and west of the Maine Turnpike is an area zoned Business Development District (BD).

In addition to these zoning districts, the Town of Gray has two Wellhead Protection Districts, designated WH1 and WH2. WH1 is located in the middle of the Study Area, north of Gray Park Road. WH2 is located east of the crossing of the Maine Turnpike and Route 26. It is the intent of these districts to protect the groundwater resources of the Town of Gray by limiting development that could potentially contaminate the groundwater within these districts.

Potential Future Development

The Town of Gray Comprehensive Plan (Comprehensive Plan Committee, 1991) indicates that the goals for future land use development is to preserve the rural character of the Town of Gray through regulation which keeps the scale and intensity of new development in proportion with existing Town development. As of the Winter of 2001, known potential future development plans within the Study Area include recreational, industrial, and limited residential development proposals. The locations of these potential future developments are shown in Figure 3-6, page 3-19 and are listed below:

- **New Recreation Trail** on Libby Hill Road adjacent to the middle and high schools, located adjacent to the Study Area. It will contain eight kilometers (five miles) of trails located on 28 hectares (70 acres) of land providing opportunities for both summer and winter activities including skiing, snowmobiling, snowshoeing, walking and running. It will provide recreation opportunities for both the Town and school communities.
- **Enercon Development** located northwest of the Maine Turnpike interchange, within the Northbrook Business Park. Enercon is interested in redeveloping the industrial area adjacent to the Northbrook Business Park. (Figure 3-6, page 3-19).
- **Expansion at the Russell School**, located on Gray Park Road (Figure 3-6, page 3-19) within the Study Area. Future development plans include adding portable classrooms to the inventory of buildings in the schools in order to accommodate a larger student population. This project is anticipated to occur within the foreseeable future (next 5 years).

3.5.2 Prime and Unique Farmland

The Farmland Protection Policy Act (FPPA) of 1984 (7 CFR 658) provides criteria for Federal agencies to identify the potential effects their programs will have on farmland and to consider alternatives to protect farmland.

The FPPA criteria rely on soil characteristics to assign farmland to four categories of importance: Prime, Unique, of Statewide Importance, and of Local Importance. Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed fiber, forage, oilseed and other agricultural crops. Unique farmland is defined as land other than prime farmland that is used for production of specific high-value food and fiber crops. Farmland identified by the state or local authorities is defined as of statewide or local importance.

The Natural Resources Conservation Service (NRCS) (Munroe, 2002) provided a list of soil types for each of the farmland categories in Cumberland County. Five soils have been identified as Prime Farmland (Table 3-4), two soils as of Statewide Importance (Table 3-5), and one as Locally Important Farmland (Table 3-6) within the Study Area. Three of the five prime farmland map units, those with codes 2 (only drained) and 4 (only irrigated), may require additional coordination with NRCS and completion of Form AD-1006 to assess project impacts to Prime and Unique Farmland.

**Table 3-4
Prime Farmland Soils**

| Map Symbol | Code ¹ | Soil Map Unit |
|------------|-------------------|---|
| BuB | 2 | Buxton silt loam, 3 to 8 percent slopes |
| EmB | 1 | Elmwood fine sandy loam, 0 to 8 percent slopes |
| HIB | 4 | Hinckley gravelly sandy loam, 3 to 8 percent slopes |
| MkB | 1 | Merrimac fine sandy loam, 3 to 8 percent slopes |
| WmB | 4 | Windsor loamy sand, 0 to 8 percent slopes |

¹1=all areas are Prime Farmland

2=only drained areas are Prime Farmland

4=only irrigated areas are Prime Farmland

**Table 3-5
Statewide Important Farmland Soils**

| Map Symbol | Soil Map Unit |
|------------|---|
| BuB | Buxton silt loam, 3 to 8 percent slopes, undrained |
| Sz | Swanton fine sandy loam (somewhat poorly drained area only) |

**Table 3-6
Locally Important Farmland Soils**

| Map Symbol | Soil Map Unit |
|------------|---|
| WmB | Windsor loamy sand, 0 to 8 percent slopes |

Farmland categories are modified based on existing or probable development. Areas of farmland soils that are covered with structures or pavement are considered to have been irreversibly “converted” and no longer available for agricultural production.

Town zoning regulations and Comprehensive Plan (Town of Gray 1994; Comprehensive Plan Committee, 1991) were reviewed to identify land that meets FPPA density criteria. There are five zones within the Study Area: Wellhead Protection Districts WH1 and WH2, Agriculture District (RRA), Village Aquifer Protection (VAP), and Business Development (BD). The minimum lot sizes for these zones are 0.7 hectares (1.8 acres) (7,432 square meters) (80,000 square feet) for BD, VAP, and RRA and 1.6 hectares (4 acres) for WH1 and WH2. These minimum lot sizes meet the FPPA criteria for 30 structures per 16 hectares (40 acres) area, but zones BD and VAP are committed to increased development and therefore do not meet FPPA criteria. The zones that meet FPPA density criteria are RRA and WH1 and WH2.

A Prime and Unique Farmland Map was developed using the Soil Conservation Service County Soil Survey (Hedstrom, 1974) (Figure 3-8, page 3-24). The map was submitted to NRSC for review and comment.

3.5.3 Community Facilities and Services

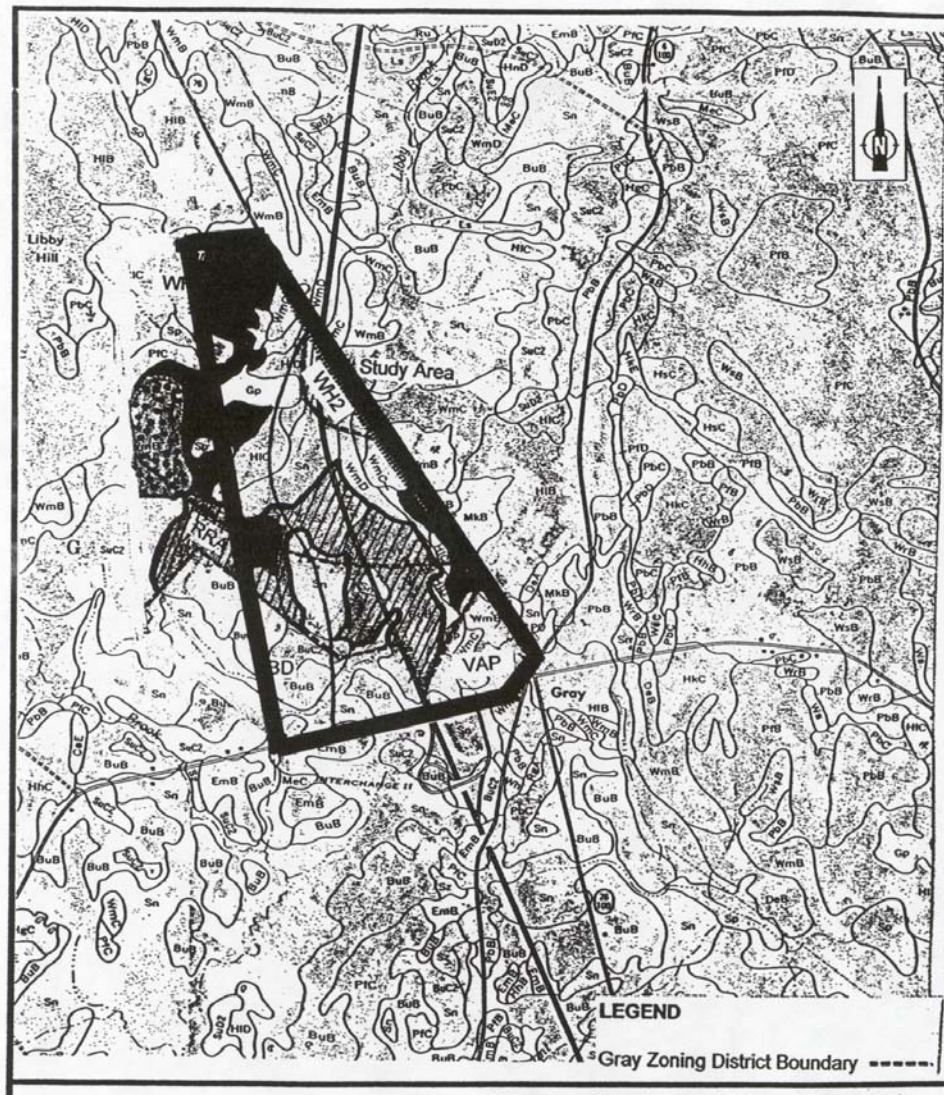
A range of community facilities and services are available in the Town of Gray and within the Study Area. The locations of these facilities in the Study Area are shown in Figure 3-9, page 3-25.




Schools

There is one elementary school located within the Study Area, the Russell Elementary School on Gray Park Road. In addition, there is one middle school and one high school that are located immediately north of the Study Area, on Libby Hill Road (See Figure 3-9, page 3-25). Although the middle and high schools are outside of the Study Area, access to these schools is via the intersection of Route 26 and Libby Hill Road, which is in the Study Area. The total enrollment within these three schools for the 1999-2000 school year was 1,456 (Maine Department of Education, 2000). The school-year enrollment, in each of the schools is presented in Table 3-7.

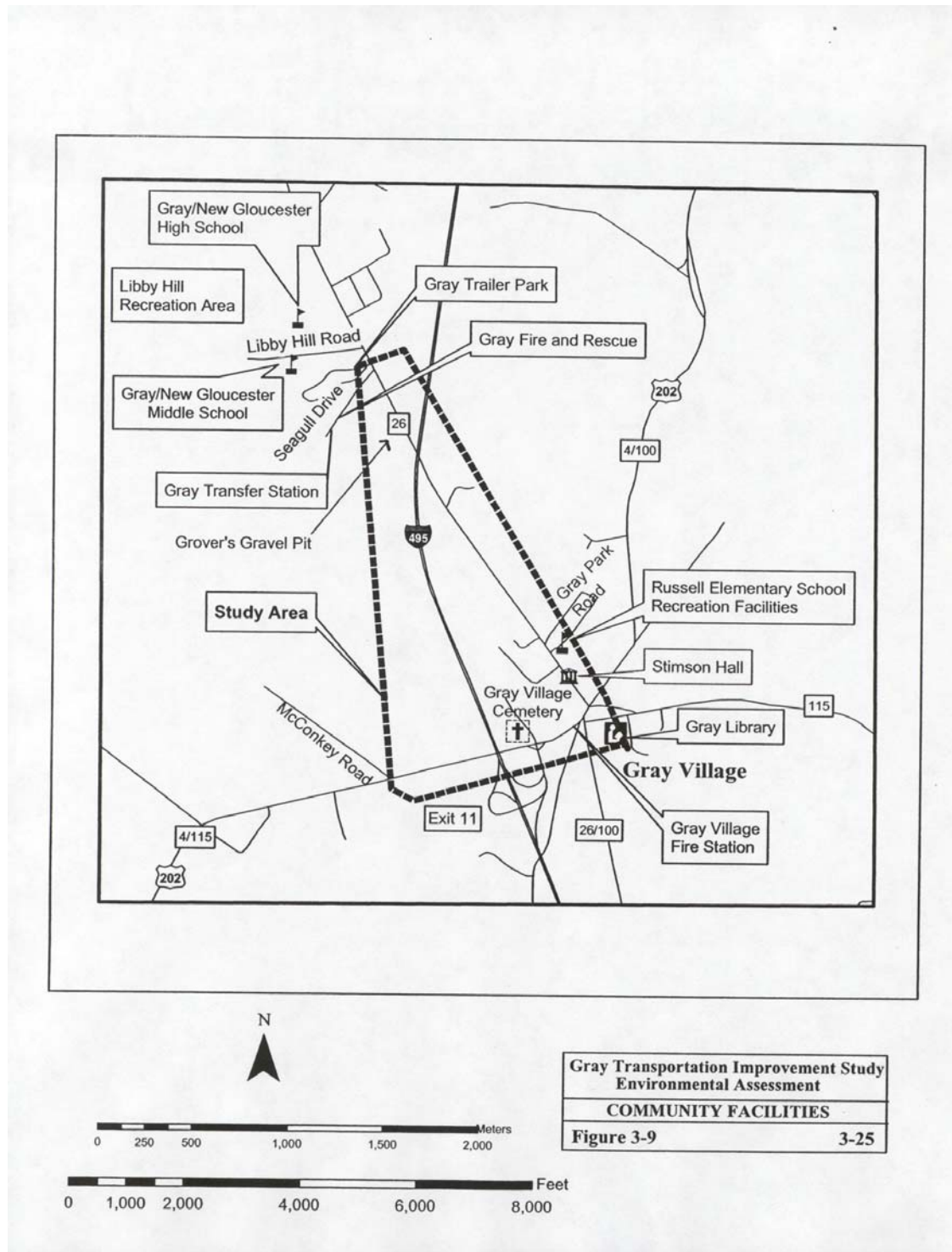
Table 3-7
Study Area School Enrollments—1999/2000

| School | Enrollment (# of Students) |
|--|----------------------------|
| Russell Elementary School | 280 |
| Gray-New Gloucester Middle School | 561 |
| Gray-New Gloucester High School | 615 |
| Source: Maine Department of Education, 2000. | |



-  Prime Farmland
-  Farmland of Statewide Importance
-  Locally Important Farmland

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| Gray Transportation Improvement Study Environmental Assessment | |
| PRIME FARMLAND | |
| Figure 3-8 | 3-24 |



Emergency Services

The Town of Gray has three fire stations. One station is located in the Study Area in Gray Village. This fire station currently houses Engine 1 and Forestry 5, Figure 3-9, page 3-25).

The Gray Fire and Rescue Department is comprised of one full-time firefighter and is supplemented by a number of specially trained volunteers. The Gray Fire and Rescue Department operates a total of 11 pieces of equipment, including three engines, one tank, one ladder, one forestry truck, a squad truck, one support vehicle, a special services unit, and two rescue units. The Gray Fire and Rescue Department also provides emergency medical services, through the Gray Rescue Service. Located at the intersection of Route 26 and Seagull Drive, the Gray Rescue Service includes one full-time week-day paramedic supplemented with numerous volunteers.

The Town of Gray contracts with the Cumberland County Sheriff's Department to handle police matters. The Sheriff's Department operates an office in Gray, located in the Public Safety Building north of Gray Village on Route 26. In addition, the Town is served by the Maine State Police, with a State Police Barracks located north of the Study Area.

Health Care Facilities

Gray does not have a hospital in its borders. Gray is served by a health center located within the Study Area on Route 26, north of Gray Village.

Recreation Facilities

The Russell Elementary School (Figure 3-9, page 3-25) located in Gray Village is the only recreation facility within the Study Area. It includes a Little League Field, one soccer field, and the Town's only playground.

Libby Hill Recreation Area is located at the end of Libby Hill Road, behind the new Middle School. Although it is just outside the northerly limit of the Study Area, access to this facility is via the intersection of Route 26 and Libby Hill Road, which is within the Study Area. Libby Hill Recreation Area is a 16 hectare (39 acre) municipally-owned area with 9.6 kilometer (6 miles) of marked hiking trails which are designed for cross country skiing. In addition, the Gray-New Gloucester High School, located on Libby Hill Road, contains outdoor recreation facilities including two baseball fields, one soccer field, and one multi-purpose field, a running track and three outdoor tennis courts.

The high school tennis courts were partially funded by the Land and Water Conservation Fund (LWCF) federal program. (see Figure 3-9, page 3-25). This regulation restricts the conversion of lands acquired or developed with LWCF assistance to other than public outdoor recreation use. Lands may be converted to uses other than public outdoor recreation uses if the land conversion is in accordance with the statewide outdoor recreation plan. Lands may be converted only upon conditions necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location.

Libraries

There is one library in the Town of Gray (Figure 3-9, page 3-25). It is located within the Study Area in Gray Village on Hancock Street. It provides a variety of services to Gray residents.

Religious Facilities

There are no religious facilities in the Study Area.

Cemeteries

The Gray Village Cemetery is the main cemetery within Gray. It is located opposite the Maine Turnpike, at Exit 11 (Figure 3-9, page 3-25).

3.5.4 Neighborhood and Community Cohesion

Gray originated in 1735 as a rural town with distinct areas of homes, businesses, agricultural activities and mill industries located around the various brooks, rivers and lakes. Development has progressed from distinct centers throughout the town to more linear development along major transportation routes. Development along Route 26 has progressed from Gray Village (Figure 1-2, page 1-3) northwest through to Crystal Lake, located outside of the Study Area. In addition, development from the Gray Village along Route 4/100/202 from Gray Village northeast toward New Gloucester had occurred in the past few decades. Most of the development that has occurred within the Town of Gray has occurred on the west side of Gray Village.

The population within Gray has been steadily increasing, by 1,560 people, or 36 percent between 1980 and 1990. The 1980 U.S. Census population for the Town of Gray was 4,344 people, and the 1990 U.S. Census population was 5,904 people. Neighborhood cohesion relates to accessibility, whether pedestrian or vehicular, between integral parts of a community or neighborhood. The Study Area is characterized as high density commercial development at Gray Village, with a mixture of commercial, residential, and public facilities. Areas west of Route 26 consist of open space and some industrial development. The Maine Turnpike divides the Study Area into two separate areas.

Discussions with local officials indicated that Gray is a largely rural town, with scattered single-family rural development. Development has occurred at various locations throughout town, each having its own historical roots. There are very few traditional neighborhoods within the Study Area, in which the homes are located nearby and residents have a common street address.

3.5.5 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, and the U.S. Department of Transportation Order on Environmental Justice (DOT Order 5610.2) set forth policies to ensure that federal actions do not disproportionately affect minority populations in the U.S. This process is referred to as Environmental Justice. Environmental Justice has been defined by the U.S. EPA's Office of Environmental Justice (EPA 1997) as "...the fair and

meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, or commercial operations or the execution of federal, state, local, and tribal programs and policies.”

In addition, the Uniform Relocation Assistance and Real Property Acquisition Policies Act (1970) states that no person shall be displaced by federal or federally-assisted construction projects unless adequate replacement housing has been provided for, open to all persons regardless of race, color, religion, sex, national origin or handicap. Residential occupants are entitled to relocation housing payments to assist them in purchasing or renting comparable decent, safe and sanitary replacement housing.

At 1.3 percent (80 people), the minority populations in the Town of Gray was less than the Portland MSA at 2.5 percent (5,332 people), Cumberland County at 2.5 percent (6,111 people) and the State of Maine at 2.1 percent (25,671 people). As indicated in Table 3-8, the percentage of the Black population, Hispanic population, Asian American, and American Indian/Alaskan Native population within the Town of Gray, Portland MSA, Cumberland County, and the State of Maine, each comprised less than one percent of the total populations in each jurisdiction. Therefore, the minority population within the Town of Gray, Portland MSA, Cumberland County and the State of Maine are low.

Table 3-8
Minority Characteristics

| Jurisdiction | 1990 Population | | | | |
|--|------------------|-----------------|-----------------|--------------------------------|---------------------------|
| | Black | Hispanic | Asian American | American Indian/Alaskan Native | Total Minority Population |
| Town of Gray | 19 (0.3 %) | 27 (0.5%) | 26 (0.4%) | 8 (0.1%) | 80 (1.3%) |
| Portland MSA | 1,344 (0.6 %) | 1,391 (0.6%) | 1,952 (0.9%) | 645 (0.3%) | 5,332 (2.4%) |
| Cumberland County | 1,565 (0.6%) | 1,771 (0.7%) | 2,147 (0.9%) | 628 (0.3%) | 6,111 (2.5%) |
| State of Maine | 7,069 (0.4%) | 5,351 (0.6%) | 6,859 (0.5%) | 6,392 (0.5%) | 25,671 (2.0%) |
| Source: US Census, STF-3; www.census.gov , 1990. | | | | | |

The 1990 Census recorded a median household income for the Town of Gray at \$37,705. The Town of Gray’s median household income was almost 15 percent higher (\$4,929) than the Portland MSA, and 17 percent (\$5,419) higher than Cumberland County, and 35 percent (\$9,851) higher than the State of Maine. Therefore the Town of Gray enjoys a higher median household income than the Portland MSA, Cumberland County and the State of Maine.

3.5.6 Business Activity Levels

The Town of Gray has close economic relationships with both the Portland Metropolitan Statistical Area (MSA) and the Lewiston-Auburn MSA. The Portland MSA is comprised of 21 towns and cities surrounding Portland in Cumberland County and contributes to the state's financial well-being. The Portland MSA constitutes the strongest economic region in Maine, due to its concentration of goods and services and related economic output. The Town of Gray also has close economic relationships with the Lewiston-Auburn MSA. The Lewiston-Auburn MSA is comprised of nine towns and cities surrounding Lewiston and Auburn in Androscoggin County.

The types of businesses located in Gray include service businesses (restaurant, gas stations, grocery stores) industrial business (research and development), distribution operations (trucking), realty, banking, and insurance agencies. Many of these businesses have seen their sales increase at a slow, steady rate. The majority of Gray Village businesses are destination-oriented, as opposed to impulse shoppers. Vehicle congestion within Gray Village contributes to the difficulty in customer access to these businesses. Currently, motorists experience difficulty in entering and exiting Gray Village business parking lots, which deters future visits to these businesses. Other industrial oriented businesses and distribution operations are located outside of Gray Village.

3.5.7 Economic Environment

Covered Employment, which is defined as the number of workers covered by unemployment insurance programs, is tabulated in Table 3-9, page 3-30 for the Town of Gray by major industry. The Gray economy is dominated by those employed in the retail trade sector, representing 28 percent of the 2000 employment statistics (619 people). Government, mining and construction are the second and third largest components of the Gray economy, representing 17.1 percent (376 people), and 15.1 percent (333 people), respectively (Maine Department of Labor, 2001).

Table 3-9
Town of Gray Covered Employment by Major Industry

| Industry | June 2000 Employment | % |
|-----------------------------------|---------------------------------|--------------|
| Agriculture Forestry & Fishing | 56 | 2.5 |
| Mining & Construction | 333 | 15.1 |
| Manufacturing | 175 | 7.9 |
| Transportation & Public Utilities | 124 | 5.6 |
| Wholesale Trade | 119 | 5.4 |
| Retail Trade | 619 | 28.1 |
| Finance, Insurance & Real Estate | 96 | 4.4 |
| Services | 306 | 13.8 |
| Government | 376 | 17.1 |
| Total | 2,204 | 100.0 |
| Maine Department of Labor, 2001 | | |

Approximately 25 percent (826 of the Town of Gray's working residents) commute to Portland, based on figures from the 1990 US Census. In addition, approximately 5 percent (180 of the Town of Gray's working residents) commutes to Lewiston-Auburn, indicating an increase in job opportunities within the area. This is due in part to steady increase in medical jobs and other service related jobs.

Annual data on the resident civilian labor force, employment, and unemployment for the Town of Gray, the Portland MSA, Cumberland County, and the State of Maine were obtained from the Maine Department of Labor, Division of Labor Market Information Systems are tabulated in Table 3-10. Civilian labor force comprises all civilians 16 years of age and over that are classified as employed or unemployed during a particular reference week. As shown in Table 3-10, the unemployment rate for the Town of Gray was almost two percent, slightly less than that of Portland MSA and Cumberland County. The unemployment rate in the Town of Gray is almost half that of the State of Maine as a whole, indicating that the Town of Gray has a thriving workforce.

Table 3-10
Civilian Labor Force and Employment (2000 Annual Average)

| Jurisdiction | Labor Force | # Employed | % Unemployed |
|--|--------------------|-------------------|---------------------|
| Town of Gray | 3,935 | 3,860 | 1.9 |
| Portland MSA | 134,800 | 131,900 | 2.1 |
| Cumberland County | 142,170 | 138,860 | 2.3 |
| State of Maine | 672,000 | 644,400 | 4.1 |
| Source: Maine Department of Labor, 2001. | | | |

3.5.8 Historic and Archaeology Resources

Historic Resources

The Maine Historic Preservation Commission has provided information concerning historic resources within the Study Area. There is one building within the Study Area that is listed on the National Register of Historic Places. Stimson Memorial Hall located on Route 26 in Gray Village was donated to the Town of Gray in 1900 by Theophilus and Mary Lawrence Stimson (Figure 3-6, 3-19). The building was constructed to house the Stimson Memorial Library. At various times, the building held graduation ceremonies, movies, entertainment and many social activities. It is now used by the Town of Gray primarily for Town Council, community and public meetings.

Archaeology

There are no known archaeological sites within the bypass corridor. Potential sites along the Route 26 corridor would not be affected by the bypass.

3.5.9 Public Parks and Recreation Lands

There are no properties that are funded by the Land and Water Conservation Fund (LWCF) federal program within the Study Area. The high school tennis courts (see Figure 3-9, page 3-25), which were partially funded by the LWCF federal program, are

outside the Study Area. However, access to this facility is via the intersection of Route 26 and Libby Hill Road, which is in the Study Area.

3.5.10 Uncontrolled Petroleums and Hazardous Wastes

The MDOT has completed a Phase I Site Assessment (MDOT, 2001) for uncontrolled and hazardous materials within the Study Area. A database search was conducted to identify and locate regulatory files for sites in the vicinity of the Study Area. In addition, field reconnaissance of the Study Area was conducted during the Summer of 2001. The purpose of the reconnaissance was to locate sites identified during the file review and to look for field evidence of uncontrolled oil and hazardous materials that were not documented in the regulatory file review.

The following facilities within the Study Area maintain active underground storage tanks: Gray Auto Werke (Exit 11 Mobil Gas Station), Gray Town Garage, Maine Turnpike Authority Maintenance Area, and one property owner. The Gray Bus Garage, and the Gray-New Gloucester High and Middle Schools are located just outside the limit of the Study Area, however access to these facilities is via the intersection of Route 26 and Libby Hill Road, which is within the Study Area.

The Maine Turnpike Maintenance Area at the south end of the Study Area and the Parker Hannifin Nichols Motor (now Andrews Passive Power Products) at the north end of the Study Area are two potential sources of contamination in the vicinity of the Study Area. Both represent industrial style development that have handled petroleum products and other chemicals during their history.

Gray Village is located over the recharge area of the Town's existing water supply. Water quality is of concern to the Town of Gray due to previous contamination occurrences. In the past, the Gray Municipal Landfill was determined to be an EPA Superfund site. There are limitations on the current water supply which is managed by the Gray Water District due to the potential of contamination by the Municipal Landfill which is located near the recharge area.

3.5.11 Utilities

The Study Area contains electrical infrastructure including overhead and underground powerlines, operated by the Central Maine Power (CMP) Company. Central Maine Power (CMP) serves Central and Southern Maine.

In addition, the Gray Water District (GWD) Water Supply Wells are located southeast of the Maine Turnpike and Route 26 overpass (See Figure 3-1, page 3-6).

No other major transmission lines are located within the Study Area.